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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,635	01/10/2002	Kevin M. Moore	1533.0980002	6960

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EXAMINER
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NAFF, DAVID M

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 08/26/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/041635

Applicant(s)

Moore et al

Examiner

dla ft

Group Art Unit

1651

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## P r i d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 4/10/02
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disp sition of Claims

- ☒ Claim(s) 32-45 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 32-45 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Pri rity under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 3 Filed 4/2/02
- ☐ Notice of Referenc (s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Revi w, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Oth r \_\_\_\_\_

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The preliminary amendment of 1/10/02 amended the specification and canceled claims 1-31.

Claims examined on the merits are 32-45, which are all claims in the application.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are confusing and unclear by step (d) of claim 32 being unclear as to whether the organic acid ester is in the insolubles removed or is in material remaining after removing insolubles.

Additionally, there is not clear antecedent basis for "the free organic acid" in step c of claim 32.

***Claim Rejections - 35 USC § 103***

Claims 32-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dumpelmann et al (5,852,211) in view of Bott et al (0 174 624).

The claims are drawn to recovery of an organic acid ester from a fermentation broth by drying the broth to produce a dried product, adding the dried product to a lower alcohol in the presence of an acid, esterifying free organic acid corresponding to the ester and removing

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insolubles by to obtain an organic acid ester. The organic acid can be 2-keto-L-gulonic acid and the acid present when the dry product is added to the lower alcohol can be sulphuric acid.

Dumpelmann et al disclose a process for obtaining 2-keto-L-gulonic acid (KGA) from a fermentation solution containing the sodium salt of 2-keto-L-gulonic acid (NaKGA) that results from neutralization. The process involves crystallizing the sodium salt (NaKGA) and separating the resulting crystals from the fermentation solution, suspending the NaKGA crystals in a lower alcohol acidified to a pH of about 1.5 to about 3.5 with an acid such as sulphuric acid where the acid is converted to an insoluble sodium salt and the NaKGA is converted to free KGA, and removing the insoluble sodium salt of the acid to obtain an alcoholic solution of the KGA. Afterwards, the free KGA may be esterified by alcohol of the alcoholic solution in the presence of a catalytic amount of acid to obtain an alkyl ester of the KGA. For example, see col 4, lines 10-33, and Examples 1-3.

Bott et al disclose producing alkyl lactate esters by filtering a crude fermentation mixture containing calcium lactate, spray drying the resulting filtrate to obtain solid calcium lactate, reacting the solid calcium lactate with an alcohol in the presence of an acid that forms a water-soluble calcium salt and isolating the lactic acid ester formed.

It would have been obvious to omit crystallizing NaKGA in the process of Dumpelmann et al and instead dry the fermentation broth and react the dried broth with the lower alcohol in the presence of acid as suggested by Bott et al using steps of drying a fermentation solution

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without crystallizing in the production of a lactic acid ester from a fermentation mixture containing a calcium salt of the lactic acid. Drying without crystallizing would have been expected to simplify the process of Dumpelmann et al, and such simplification would have been motivation to use drying in place of crystallizing and separating the crystals. While Bott et al filters the fermentation broth, it would have been obvious to omit filtering to further simplify. There is seen nothing to lead one to believe that the reacting of NaKGA as disclosed by Bott et al cannot occur in an unfiltered fermentation broth. In Dumpelmann et al, free KGA can be converted to an ester, and to form the ester followed by removing insolubles would have merely depended on individual preference for the ester instead of free KGA. The conditions of dependent claims would have been matters of obvious choice in view of the disclosures of the references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is (703) 308-0520. The examiner can normally be reached on Monday-Friday from about 9:30 AM to about 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, a message can be left on voice mail.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn, can be reached at telephone number (703) 308-4743.

The fax phone number is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

DMN

8/25/03



DAVID M. NAFF  
PRIMARY EXAMINER  
ART UNIT 1651